

In re application of:

Stephen P.A. Fodor et al.

Serial No. 07/954,646

Filed: September 30, 1992

For: VERY LARGE SCALE IMMOBILIZED POLYMER SYNTHESIS

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COMMISSIONER OF PATENTS AND TRADEMARKS

Washington, D.C. 20231

Sir:

In response to the Office Action mailed July 12, 1994, please amend the above-identified application as follows.

IN THE CLAIMS:

All of the claims are listed below for the Examiner's convenience.

Claims that are not amended or were previously cancelled are identified by printing in small type.

Please cancel claims 105 and 107-109.

Please amend claims 110-114 and 117 as follows:

Claims 1-109: --CANCELLED--

110. (Twice amended) A substrate with a surface comprising  $10^3$  or more groups of oligonucleotides with different, known sequences covalently attached to the surface in [predefined] known regions, said  $10^3$  or more groups of oligonucleotides occupying a total area of less than 1 cm<sup>2</sup> on said substrate.

111. (Twice amended) The substrate as recited in claim 110 wherein said substrate comprises  $10^4$  or more different groups of oligonucleotide with known sequences covalently coupled to [predefined] known regions of said substrate.

112. (Twice amended) The substrate as recited in claim 110 wherein said substrate comprises  $10^5$  or more different groups of oligonucleotides with known sequences in [predefined] known regions.

113. (Twice amended) The substrate as recited in claim 110 wherein said substrate comprises  $10^6$  or more different groups of oligonucleotides with known sequences in [predefined] known regions.

114. (Twice amended) The substrate as recited in claim 110 wherein said groups of oligonucleotides are at least 50% pure within said [predefined] known regions.

115. The substrate as recited in claim 110 wherein the groups of oligonucleotides are attached to the surface by a linker.

116. —CANCELLED—

117. (Amended) An array of more than 500 different groups of oligonucleotide molecules with known sequences covalently coupled to a surface of a substrate, said groups of oligonucleotide molecules each in [predefined] known regions and differing from other groups of oligonucleotide molecules in monomer sequence, each of said [predefined] known regions being an area of less than about  $0.01\text{ cm}^2$  and each [predefined] known region comprising oligonucleotides of known sequence, said 500 different groups occupying a total area of less than  $1\text{ cm}^2$ .

118. The array as recited in claim 117 wherein said area is less than  $10,000\text{ microns}^2$ .